

## New Planning Features and Revisions to RUSLE2 (version 2.5.2.11)

**Managements** have a slightly new look. Parameters for Crop Year results has been added. Crop Year is defined as the period from the harvest of the last crop to the harvest of the current crop. This is important in determining which crop to attribute soil disturbance to calculate if a crop meets the 329 STIR requirements or inserting a crop in rotation to determine the impacts of STIR values and soil loss.

Management: CMZ 63\b\Multi-year Rotation Templates\Row Crops\Corn Wheat Soybean Rotations\CMZ63,Corn,grain;MT,Corn,grain;MT,Wheat;NT,Soybeans,NT

Graphic: ☐ Rel. row grade, %: 100

Long-term natural rough, mm: 6.0  
Normally used as a rotation?: Yes  
Duration, yr: 3

Management STIR: 55 Avg. annual STIR: 18

How set crop year interval?: all KILL ops

Fuel for all operations: Local/Diesel  
Base equiv. diesel use, gal/ac: 11.6  
Base energy use, BTU/ac: 1600000  
Base fuel cost, US\$/ac: 44.87

View/edit rotation builder used to make this management:   
Irrigation system: no irrigation

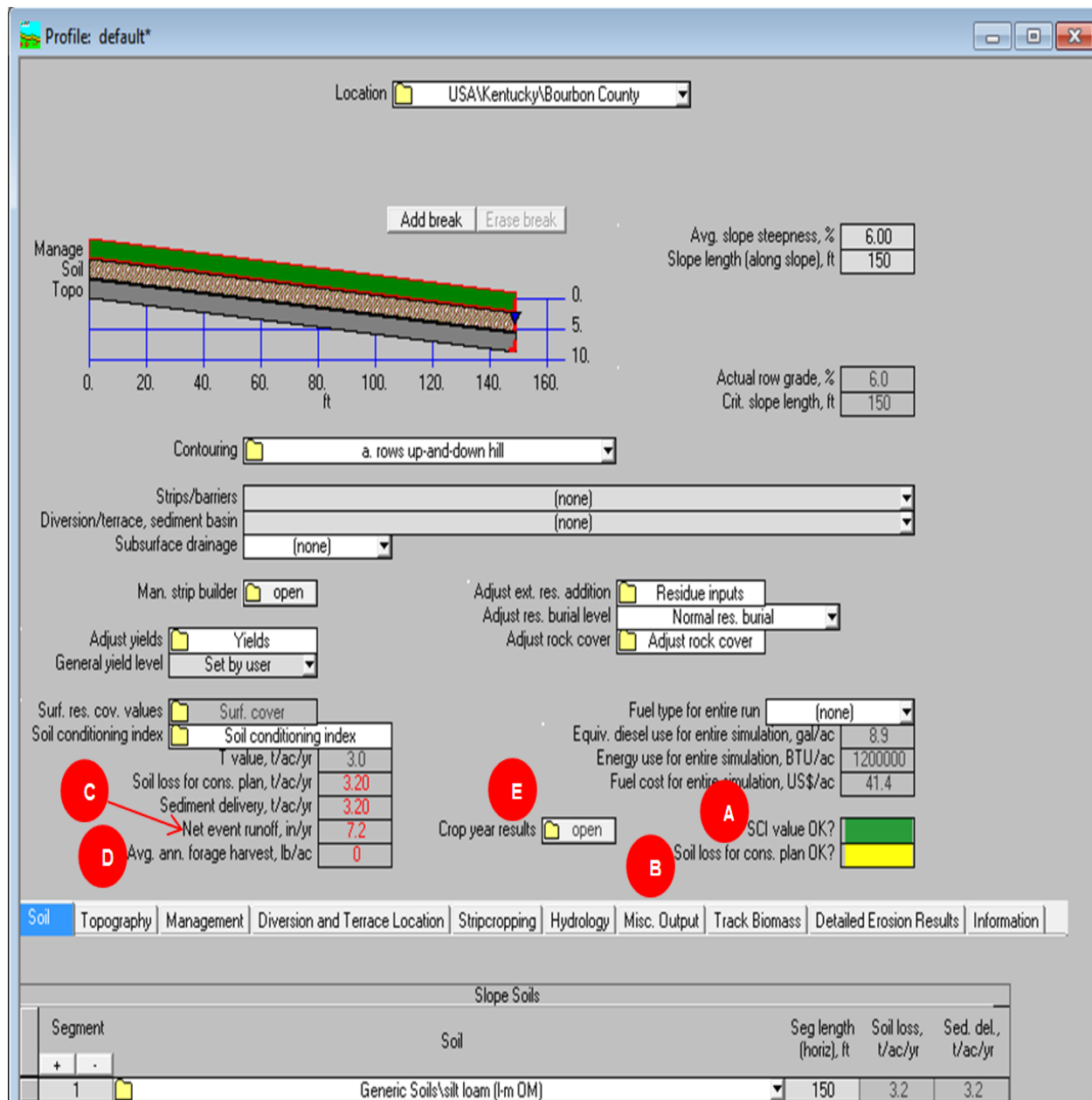
Crop year	STIR	Crop	Start date, m/d/y	End date, m/d/y
1	23	Corn, grain	10/23/1	9/15/2
2	23	Corn, grain	9/16/2	9/15/3
3	3.5	Wheat, winter, grain S.E.	9/16/3	5/26/4
4	5.6	Soybean, southern 15-20 in rows	5/27/4	10/22/4

Operations:

Date, m/d/y	End/Start crop year?	Operation	Vegetation	Yield (harv. units), #/ac	Type of cover material	Cover matl add/remov e, lb/ac	Cover from addition, %	Standing res. added by op. desc., lb/ac	Fuel used this operation
4/14/2	No	Fert applic. surface broadcast							Local/Diesel
4/14/2	No	Disk, tandem light finishing							Local/Diesel
4/15/2	No	Sprayer, pre-emergence							Local/Diesel
4/15/2	No	Planter, double disk opnr	Corn, grain	136					Local/Diesel
5/9/2	No	Sprayer, post emergence			weeds: 0-3 mo	50	2.9		Local/Diesel
5/15/2	No	Fert applic. surface broadcast							Local/Diesel
5/29/2	No	Sprayer, insecticide post emergence							Local/Diesel
9/15/2	Yes	Harvest, killing crop 20pct standing stubble				6000	90	1500	Local/Diesel
4/14/3	No	Fert applic. surface broadcast							Local/Diesel
4/14/3	No	Disk, tandem light finishing							Local/Diesel
4/15/3	No	Sprayer, pre-emergence							Local/Diesel
4/15/3	No	Planter, double disk opnr	Corn, grain	136					Local/Diesel
5/9/3	No	Sprayer, post emergence			weeds: 0-3 mo	50	2.9		Local/Diesel
5/15/3	No	Fert applic. surface broadcast							Local/Diesel
5/29/3	No	Sprayer, insecticide post emergence							Local/Diesel
9/15/3	Yes	Harvest, killing crop 20pct standing stubble				6000	90	1500	Local/Diesel
10/15/3	No	Sprayer, kill crop							Local/Diesel
10/16/3	No	Fert applic. surface broadcast							Local/Diesel
10/17/3	No	Drill or air seeder single disk openers 7-10 in spac.	Wheat, winter, grain S.E.	55.0					Local/Diesel
10/31/3	No	Sprayer, post emergence			weeds: 0-3 mo	50	2.9		Local/Diesel

The letter A in the figure above indicates the total STIR for the entire management (in this case a 3 year rotation), the letter B indicates the average annual STIR for the rotation, letter C indicates how RUSLE2 determined the dates for determining the Crop Year Interval and the letter D indicates the Crop Year STIR results for each crop in the rotation. Letter E marks the column that the user will use to manually set the start and stop dates for calculating the Crop Year Interval. This is necessary in some cases where RUSLE2 will sometimes erroneously assign weed growth and cover crops their own interval. This planner must over-ride R2 to meet the definition of the crop interval from harvest of the previous crop to harvest of the current crop.

**Profiles** have some new outputs and functions. The letter A in the figure below indicates whether the SCI is above 0.2 (box is green), below -0.2 (box is red) or within the range of -0.2 to 0.2 (box is yellow). The letter B indicates whether the “Soil loss for conservation planning” is below T (box is green), between T and 2T (box is yellow) or is greater than 2T (box is red). The letter C indicates the amount of runoff expected from the R2 run and the letter D indicates the amount of forage harvest (average annual) results when using the new-style perennial vegetations. Letter E marks the Crop Year Results for the user to view and to manually set the start and stop dates for calculating the Crop Year Interval. More on the details of the Crop Year Results window on the next page.



**Crop Year Results.** The letter A in the figure below indicates how RUSLE2 determined the dates for determining the Crop Year Interval, the total STIR for the entire management (in this case a 3 year rotation), and the letter B marks the column the user will use to manually set the start and stop dates for calculating the Crop Year Interval. This is necessary in some cases where RUSLE2 will sometimes erroneously consider weed growth and cover crops their own crop interval. The user must be over-ride R2, to meet the definition of the interval from harvest of the previous crop to harvest of the current crop. The letter C indicates the Crop Year STIR results for each crop in the rotation, letter D indicates the amount of forage harvest (average annual) results when using the new-style perennial vegetation file, letter E indicates the amount of shortfall for grazing when using the new-style perennial vegetation file, and the letter F indicates is a place holder for additional results that will be added in the next upgrade to RUSLE2 that will include Soil Loss and Sediment delivery values per Crop Year Interval.

Profile: Crop year (Crop year results[1]) of default\*

How set crop year end/start? ...I KILL & BEGIN GROWTH ops

**A**

**B**

Date, m/d/y	End/Start crop year?	Operation	Vegetation	Yield	Material added	Amount added, lb/ac
4/14/2	No	operations\Fert applic. surface broadcast				
4/14/2	No	operations\Disk, tandem light finishing				
4/15/2	No	operations\Sprayer, pre-emergence				
4/15/2	No	operations\Planter, double disk opni	vegetations\Corn, grain	7616.0		
5/3/2	No	operations\Sprayer, post emergence			residues\weeds; 0-3 mo	50
5/15/2	No	operations\Fert applic. surface broadcast				
5/29/2	No	operations\Sprayer, insecticide post emergence				
9/15/2	Yes	operations\Harvest, killing crop 20pct standing stubble				
10/15/2	No	operations\Aerator, field surface, ground driven				
10/22/2	No	operations\Fert applic. surface broadcast				
11/1/2	No	operations\Drill or air seeder single disk openers 7-10 in spac.	vegetations\Wheat, winter, mid-south	3300.0		
11/15/2	No	operations\Sprayer, post emergence			residues\weeds; 0-3 mo	50
2/15/3	No	operations\Fert applic. surface broadcast				
3/15/3	No	operations\Sprayer, insecticide post emergence				
5/15/3	No	operations\Sprayer, insecticide post emergence				
6/10/3	Yes	operations\Harvest, killing crop 50pct standing stubble				
6/23/3	No	operations\Sprayer, kill crop				
6/23/3	No	operations\nter, double disk opni w/fluted coulters, 15 inch row spacing	vegetations\Soybean, mw 15 - 20 in rows	1200.0		
7/7/3	No	operations\Sprayer, post emergence			residues\weeds; 0-3 mo	50
8/15/3	No	operations\Sprayer, insecticide post emergence				

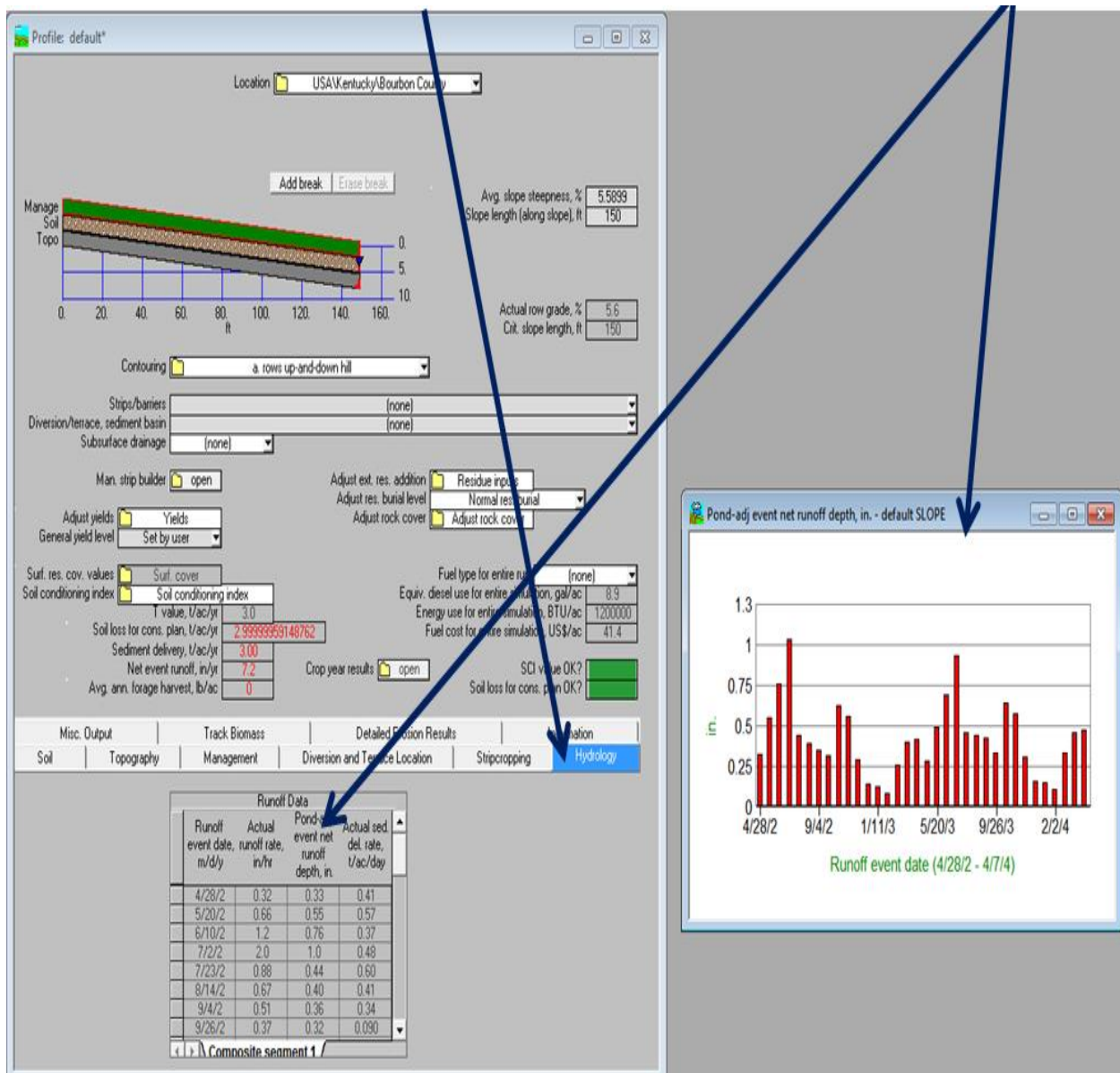
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**C** **D** **E** **F**

Crop year	Start date, m/d/y	End date, m/d/y	Crop	STIR	Forage harvest, lb/ac	Forage shortfall, lb/ac
1	11/16/1	9/15/2	vegetations\Corn, grain	23	0	0
2	9/16/2	6/10/3	vegetations\Wheat, winter, mid-south	15	0	0
3	6/11/3	11/15/3	vegetations\Soybean, mw 15 - 20 in rows	5.6	0	0

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New Tab in the **Profile** view called Hydrology. This tab allows the user to view the runoff events for your run.



The screenshot displays the Water Erosion Prediction System (WEPS) software interface. The main window shows a cross-section of a field with a slope of 5.589%. The 'Detailed Erosion Results' tab is selected, displaying a table of erosion data for various simulation days. A secondary window titled 'Slope soil loss for cons plan, t/ac/day - default SLOPE' shows a bar chart of soil loss over time, with a peak around 4/14/2. Arrows indicate the flow of data from the main window to the secondary window.

**WEPS Main Window Details:**

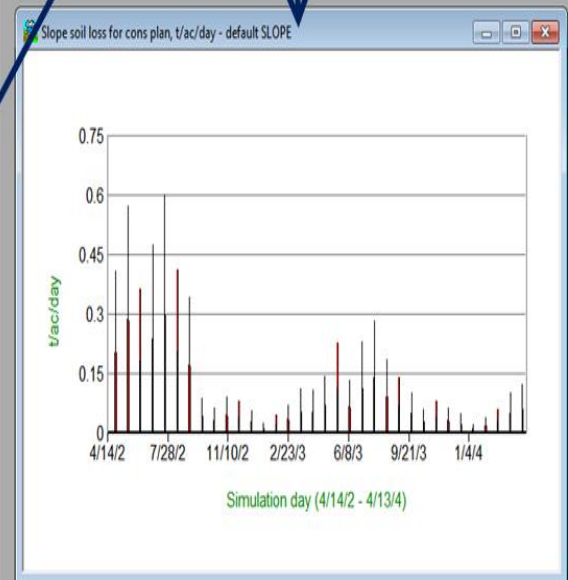
- Location:** USA\Kentucky\Bourbon County
- Manage Soil Topo:** Add break, Erase break
- Avg. slope steepness, %:** 5.589
- Slope length (along slope), ft:** 150
- Actual row grade, %:** 5.6
- Cat. slope length, ft:** 150
- Contouring:** a. rows up-and-down hill
- Strips/baniers:** (none)
- Diversion/terrace, sediment basin:** (none)
- Subsurface drainage:** (none)
- Man. strip builder:** open
- Adjust ext. res. addition:** Residue inputs
- Adjust res. burial level:** Normal res. burial
- Adjust rock cover:** Adjust rock cover
- Adjust yields:** Yields
- General yield level:** Set by user
- Soil res. cov. values:** Soil cover
- Soil conditioning index:** Soil conditioning index
- T value, t/ac/yr:** 3.0
- Soil loss for cons. plan, t/ac/yr:** 2.99999959148762
- Sediment delivery, t/ac/yr:** 3.00
- Net event runoff, in/yr:** 7.2
- Avg. ann. forage harvest, lb/ac:** 0
- Fuel type for entire run:** (none)
- Equiv. diesel use for entire simulation, gal/ac:** 16.9
- Energy use for entire simulation, BTU/ac:** 20000
- Fuel cost for entire simulation, US\$/ac:** 41.4
- SCI value, OK?:** (green box)
- Soil loss for cons. plan, OK?:** (green box)
- Soil loss for cons. plan, t/ac/yr:** 2.99999959148762
- Soil loss erod. portion, t/ac/yr:** 3.00
- Detachment on slope, t/ac/yr:** 3.00
- Sediment delivery, t/ac/yr:** 3.00

**Detailed Erosion Results Table:**

Simulation day, m/d/y	Detach. t/ac/day	Slope soil loss rate, t/ac/day	Slope soil loss for cons plan, t/ac/day	Slope sed. del. rate, t/ac/day	Slope sed. load, lb/ft/day
4/14/2	0	0	0	0	0
4/15/2	0	0	0	0	0
4/16/2	0	0	0	0	0
4/17/2	0	0	0	0	0
4/18/2	0	0	0	0	0
4/19/2	0	0	0	0	0
4/20/2	0	0	0	0	0
4/21/2	0	0	0	0	0
4/22/2	0	0	0	0	0
4/23/2	0	0	0	0	0

**Slope Soil Loss Chart Details:**

- Y-axis:** t/ac/day
- X-axis:** Simulation day (4/14/2 - 4/13/4)
- Legend:** Slope soil loss for cons plan, t/ac/day (red bars)
- Peak Value:** ~0.6 t/ac/day



New **vegetations** will soon be coming out in the database. The new version of RUSLE2 is capable of tracking two live vegetations at the same time and allows newly created perennial vegetations to senesce older leaves into standing residue while still growing newer leaves. However, these new vegetations **WILL NOT BE AVAILABLE UNTIL YOU HAVE RECEIVED TRAINING ON HOW TO USE THEM AND ONLY USE THEM WITH THE NEW MANAGERMENTS ASSOCIATED WITH THE NEW FORAGE MANAGEMENT ZONES.**

